

REMARKS

Status of the claims:

Claims 1-13 are pending and ready for further action on the merits. Reconsideration is respectfully requested in light of the following remarks.

Rejections under 35 USC §103

Claims 1-13 are rejected under 35 USC §103(a) as being unpatentable over the combination of EP '930 (EP 1 004 930) and Matsumoto '668 (US Patent No. 5,958,668).

Claims 1-13 are rejected under 35 USC §103(a) as being unpatentable over the combination of EP '812 (EP 0 962 812) and Matsumoto '668.

These rejections are traversed for the following reasons.

Present Invention

The present invention, as recited in claim 1, relates to a heat-developable image recording material comprising:

- a support;
- a photosensitive silver halide;
- a reducing agent for a silver ion;
- a binder; and
- a non-photosensitive organic silver salt grain,

wherein the non-photosensitive organic silver salt grain has:

- 1) a silver stearate content of 1 mol% or less per mol of the non-photosensitive organic silver salt;
- 2) a length/width ratio of 1 to 9;
- 3) an aspect ratio of 1.1 to 30; and
- 4) an equivalent-sphere diameter of 0.05 to 1  $\mu\text{m}$ .

#### Disclosure of EP '930

EP '930 discloses a thermally developable photosensitive material having a photosensitive layer comprising a photosensitive silver halide, an organic silver salt, a reducing agent, and a binder. The thermally developable photosensitive material containing the organic silver salt have tabular organic silver salt grains having an aspect ratio of at least 3, and the average of needle ratio of the tabular organic silver salt grains measured from the principal plane direction is not less than 1.1 and less than 10. The thermally developable photosensitive material is said to exhibit high sensitivity and low fog.

#### Disclosure of Matsumoto '668

Matsumoto '668 discloses a recording medium comprising a support having thereon a recording layer comprising an organic

silver salt, a developing agent for the organic silver salt, a water-soluble binder and an antifoggant in an amount of from 10 mol % to 40 mol % based on the organic silver salt. The recording material is said to have a long shelf life and is said to provide a high-density image.

**Disclosure of EP '812**

EP '812 discloses fatty acid silver salt particles of an aqueous dispersion, which are formed by simultaneously adding into a reaction vessel (a) a silver ion-containing aqueous solution or a silver ion-containing water-organic solvent mixed solution and (b) an aqueous solution of an alkali metal salt of a fatty acid, a solution in a water-organic solvent mixed solvent, or a solution in an organic solvent, in an amount of at least 10% of the total amount of silver to be added, and the fatty acid silver salt particles formed satisfies all the following characteristics: (1) The average equivalent-sphere diameter of the fatty acid silver salt particles is from 0.1  $\mu\text{m}$  to 0.8  $\mu\text{m}$ ; (2) The average ratio of long sides/short sides in the main planes of the fatty acid silver salt particles is from 1 to 4; (3) The average aspect ratio of the particle is from 2 to 30; and (4) The average thickness of the particles is from 0.01  $\mu\text{m}$  to 0.20  $\mu\text{m}$ .

Removal of the Rejections over EP '930, EP '812, and Matsumoto '668

Applicants respectfully point out that EP '812 discloses 2% wt. stearic acid and EP '930 discloses 24% wt. or 3% wt. stearic acid in their examples. Thus, Applicants submit that not only does EP '812 and EP '930 not disclose or suggest the heat-developable image recording material that has a silver stearate content of 1 mol % or less as claimed in claim 1, but EP '812 and EP '930 appear to teach away from this amount, and thus, teach away from the instant invention.

Applicants, herein, attach a Rule 132 declaration executed by Takayoshi Oyamada, one of the inventors of the instant invention, that shows that a silver stearate content of 1 mol % or less provides the instant invention with superior properties that is not achieved by either of JP '812 or JP '930. The Examiner's attention is directed to pages 3 and 4 of the declaration wherein it is shown that Organic Silver Salt Dispersion examples R, T, and V, which have silver stearate levels that fall outside of the claimed invention (i.e., 2 mol %) show inferior change in percentage of image preservability than do the examples that fall within the scope of the instant invention (i.e., P, Q, S, and U, which have a silver stearate content of 1 mol % or less).

Accordingly, EP '812 and EP '930, which disclose only examples with silver stearate amounts that fall outside of the instant invention, cannot render obvious the instant invention. Matsumoto '668 fails to make up for the deficiencies in the disclosures of EP '812 and EP '930.

Thus, from a reading of EP '812 and EP '930, one would never be able to arrive at the superior features of the instant invention. Even if one were to assume that a *prima facie* case of obviousness had been made with respect to the combination of EP '812, EP '930, and Matsumoto '668, which Applicants do not concede, the instant invention possesses unexpectedly superior results. Please see the Rule 132 declaration for confirmation of this. Accordingly, Applicants submit that the rejection has been obviated. Withdrawal of the rejection is warranted and respectfully requested.

With the above remarks, it is believed that the claims, as they now stand, define patentable subject matter such that passage of the instant invention to allowance is warranted. A Notice to that effect is earnestly solicited.

Pursuant to 37 C.F.R. §§ 1.17 and 1.136(a), Applicant(s) respectfully petition(s) for a one (1) month extension of time for filing a reply in connection with the present application, and the required fee of \$110.00 is attached hereto.

**Conclusion**

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact T. Benjamin Schroeder (Reg. No. 50,990), at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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Attachment(s): Declaration under 37 CFR 1.132 of Mr. Takayoshi OYAMADA

(Rev. 09/30/03)



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GROUP 1700

## PATENT APPLICATION

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Takayoshi OYAMADA, et al.

Group Art Unit: 1752

Appln. No.: 10/025,455

Examiner: CHEA, THORL

Filed: December 26, 2001

For: HEAT-DEVELOPABLE IMAGE RECORDING MATERIAL

DECLARATION UNDER 37 C.F.R. § 1.132Assistant Commissioner for Patents  
Alexandria, VA 22313-1450

Sir:

I, Takayoshi Oyamada, do declare and state as follows:

I am a citizen of Japan.

I graduated from Science University of Tokyo and received a Master's Degree in the course of Science in March, 1993.

Since April 1993 I have been employed by Fuji Photo Film Co., Ltd. and have been engaged in research and development of emulsions at the Ashigara Laboratories of said company.

I am familiar with the subject matter disclosed by said application as well as the Office Action dated July 2, 2003 concerning said application.

In order to demonstrate the unexpected superiority of the present invention, the following experimentation was conducted by me or under my supervision.

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## PATENT APPLICATION

EXPERIMENTATION

Organic silver salt dispersions P to R were prepared in the same manner as the organic silver salt dispersions A to G in Example 1 of the present specification; organic silver salt dispersions S and T were prepared in the same manner as the organic silver salt dispersions H and K in Example 1 of the present specification; and organic silver salt dispersions U and V were prepared in the same manner as organic silver salt dispersions L to O in Example 1 of the present specification. The organic silver salt grains contained in the thus-obtained organic silver salt dispersions P to V had a volume weighed average diameter (equivalent-sphere diameter), a coefficient of variation in the volume weighed average diameter, a ratio (length/width ratio) of long side c to short side b of a grain, and an aspect ratio shown in Table 1A.



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TABLE 1A

Organic Silver Salt Dispersion	Content (mol%)			Reaction Temperature (°C)	Volume Weighed Average diameter (µm)	Coefficient of Variation (%)	Length/Width Ratio	Aspect Ratio
	Silver Stearate	Silver Arachidate	Silver Behenate					
F	0.5	1.5	98	30	0.4	11	1	12
Q	1	1	98	30	0.41	12	1	13
R	2	0	98	30	0.41	12	1.1	15
S	0.5	1.5	98	30	0.4	11	1	12
T	2	0	98	30	0.41	12	1.1	15
U	0.5	1.5	98	30	0.4	11	1	12
V	2	0	98	30	0.41	12	1.1	15

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Each of Heat-developable Photosensitive Materials 1P to 1V was manufactured and was evaluated in the photographic performance in the same manner as in Example 1 of the present specification. The results are shown in Table 2A.

TABLE 2A

Heat-developable Photosensitive Material	Dmin (1D as 100)	Change in Percentage of Image Preservability (%)	Remarks
1P	100	13	Invention
1Q	103	25	Invention
1R	105	41	Comparison
1S	100	15	Invention
1T	106	49	Comparison
1U	100	14	Invention
1V	104	45	Comparison

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## PATENT APPLICATION

From the results shown above, when the stearic acid content exceeds 1%, the change percentage of image preservability becomes drastically large, becoming a problematic level for practical application. This fact is understood to have a mechanism of image preservability deterioration caused by a dissolved product due to the stearic acid present in the layer after thermal development when the content of stearic acid exceeds 1%. The fact that the stearic acid content contributes so much to the image preservability of heat-developable photosensitive materials has not been known as yet, and is a surprising new knowledge in the art.

I declare further that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under §1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Respectively submitted,

Date: October 28, 2003Takayoshi Oyamada

Takayoshi Oyamada